

ABSTRACT

[0046] The present invention relates to a coolant crossover member and intake manifold assembly adapted for use in a vehicle engine and method for producing the same. The crossover and manifold assembly includes crossover and a manifold. The crossover has a passage formed therein extending between a first end and a second end thereof. The manifold is joined to the first and second ends of the crossover. The manifold is provided with first and second openings which define first and second inner surfaces, respectively. According to the present invention, at least one of the first end and the second end of the crossover is disposed within one of the first and the second openings of the manifold such that the at least one of the first end and the second end of the crossover completely covers the one of the first and the second inner surfaces of the one of the first and the second openings thereby preventing fluid from contacting the one of the first and second inner surfaces of the one of the first and second openings of the manifold.